PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 01829 GWW/kaj	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/NZ2004/000188	International filing date *(day/month/year)* 18 August 2004	Priority date *(day/month/year)* 18 August 2003

International Patent Classification (IPC) or national classification and IPC

Int. Cl.[7] B62K 1/00

Applicant

CANTERPRISE LIMITED et al

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. [X] *(sent to the applicant and to the International Bureau)* a total of 3 sheets, as follows:
      - [ ] sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      - [ ] sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

   b. [ ] *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items:
   - [X] Box No. I Basis of the report
   - [ ] Box No. II Priority
   - [ ] Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - [ ] Box No. IV Lack of unity of invention
   - [X] Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - [ ] Box No. VI Certain documents cited
   - [ ] Box No. VII Certain defects in the international application
   - [ ] Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of the report
17 June 2005	11 July 2005
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer A SEN Telephone No. (02) 6283 2158

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/NZ2004/000188

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:

☐ international search (under Rules 12.3 and 23.1 (b))

☐ publication of the international application (under Rule 12.4)

☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

☐ the international application as originally filed/furnished

☒ the description:

pages **1-11** as originally filed/furnished
pages* received by this Authority on with the letter of
pages* received by this Authority on with the letter of

☒ the claims:

pages as originally filed/furnished
pages* as amended (together with any statement) under Article 19
pages* **12-14** received by this Authority on **17 June 2005** with the letter of **17 June 2005**
pages* received by this Authority on with the letter of

☒ the drawings:

pages **1/9-9/9** as originally filed/furnished
pages* received by this Authority on with the letter of
pages* received by this Authority on with the letter of

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages
☐ the claims, Nos.
☐ the drawings, sheets/figs
☐ the sequence listing (*specify*):
☐ any table(s) related to the sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages
☐ the claims, Nos.
☐ the drawings, sheets/figs
☐ the sequence listing (*specify*):
☐ any table(s) related to the sequence listing (*specify*):

* *If item 4 applies, some or all of those sheets may be marked "superseded."*

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/NZ2004/000188

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-20	YES
	Claims		NO
Inventive step (IS)	Claims	1-20	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-20	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Claims 1-20 meet the criteria set forth in PCT Article 33(2)-(4) for novelty, inventive step and industrial applicability. The prior art published before the priority date does not disclose, singly or in combination, a powered unicycle with a wheel, a control system, a handlebar and a rider-support which is pivotally mounted about an axis which is at least approximately vertical in use of the unicycle

WHAT WE CLAIM IS:

1. A powered unicycle including:

a wheel driven by a motor;

a control system arranged to automatically maintain the fore-aft balance of the unicycle via operation of the motor;

a handlebar, coupled to the wheel by a pillar, which is operable to steer the wheel; and

a rider-support which supports a rider, and which is pivotally mounted about an axis which is at least approximately vertical in use of the unicycle.

2. A powered unicycle according to claim 1, wherein the rider-support is pivotally mounted to the pillar by a pivotal connection.

3. A powered unicycle according to claim 2, wherein the pivotal connection is configured to resiliently urge the rider support toward a central position relative to the wheel.

4. A powered unicycle according to claim 3, wherein the pivotal connection includes a bush formed from resilient material located about a lower portion of the pillar and a sleeve coupled to the rider-support which surrounds the bush.

5. A powered unicycle according to claim 2, wherein the pivotal connection includes a spring mechanism arranged to urge the rider-support toward a central position relative to the wheel.

6. A powered unicycle according to claim 5, wherein the spring mechanism includes two arms fixed relative to either the pillar or the rider-support and against which springs operate to urge the rider-support toward said central position.

7. A powered unicycle according to any one of the preceding claims, wherein the rider-support is a standing platform upon which the rider may stand.

8. A powered unicycle according to any one of claims 1-6, wherein the rider-support includes a seat upon which the rider may sit.

9. A powered unicycle according to claim 8, wherein the rider-support further includes a foot platform upon which the rider may place their feet while sitting on the seat.

10. A powered unicycle according to claim 1, wherein the rider-support is a seat, mounted to the pillar by a seat post, the seat being pivotal upon the seat post.

11. A powered unicycle according to claim 1, wherein unicycle includes two rider-supports, each being a foot pad pivotally mounted on a standing platform which is rigidly mounted to the pillar.

12. A powered unicycle according to claim 11, wherein the foot pads are biased toward a central position relative to the wheel.

13. A powered unicycle according to any one of the preceding claims, wherein the control system has one or more associated sensors arranged to detect whether the pillar and wheel are aligned with the local gravitational and inertial force field.

14. A powered unicycle according to claim 13, wherein the control system is arranged to operate the motor to accelerate the wheel when it is detected as behind the field and to decelerate the wheel when it is detected as ahead of the field, to automatically maintain the fore-aft balance of the unicycle.

15. A powered unicycle including:

a wheel driven by a motor;

a control system arranged to automatically maintain the fore-aft balance of the unicycle via operation of the motor;

a handlebar, coupled to the wheel by a pillar, which is operable to steer the wheel; and

a standing platform, upon which a rider may stand, which is pivotally mounted about an axis which is at least approximately vertical in use of the unicycle.

16. A powered unicycle according to claim 15, wherein the standing platform is pivotally mounted to the pillar by a pivotal connection.

17. A powered unicycle according to claim 16, wherein the pivotal connection is configured to resiliently urge the standing platform toward a central position relative to the wheel.

18. A powered unicycle according to claim 16, wherein the pivotal connection includes a spring mechanism arranged to urge the standing platform toward a central position relative to the wheel.

19. A powered unicycle including:

a wheel driven by a motor;

a control system arranged to automatically maintain the fore-aft balance of the unicycle via operation of the motor;

a handlebar, coupled to the wheel by a pillar, which is operable to steer the wheel;

a platform fixed to the pillar; and

two foot pads each pivotally mounted to the platform about an axis which is at least approximately vertical in use of the unicycle, upon which the rider may stand.

20. A powered unicycle according to claim 19, wherein the foot pads are biased toward a central position relative to the wheel.